

Application No.: 10/657,730  
Amendment Dated March 7, 2007  
Reply to Office Action of September 7, 2006

### **REMARKS/ARGUMENTS**

As explained more fully below, Applicant has amended independent Claims 1, 26, 57 and 73, and the claims depending therefrom, to more clearly define the claimed invention. As a result of these amendments, dependent Claims 3, 4, 28, 29, 34, 59, 60, 75 and 76 have been canceled. Applicant requests reconsideration of Claims 1-2, 5-16, 26-27, 30-33, 35-40, 57-58, 61-67, and 73-74, and 77-82 in view of the Amendments and Remarks set forth herein.

### **The Rejections Under § 103 Directed to the Claims Are Overcome**

The Office Action rejects Claims 1-4, 8, 57-60 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,427,607 to Cristovici in view of U.S. Patent No. 4,508,542 to Langhoff. The Office Action rejects Claims 5-6, 9-12, 14, 26-31, 33-36, 38, 61, 63-66, 73-77, and 79-81 under 35 U.S.C. § 103(a) as being obvious over the Cristovici '607 patent in view of the Langhoff '542 patent in further view of U.S. Patent No. 3,851,827 to Carignani. The Office Action rejects Claims 7, 32, 62 and 78 under 35 U.S.C. § 103(a) as obvious over the Cristovici '607 patent in view of the Langhoff '542 patent in further view of U.S. Patent No. 5,992,641 to Caldwell. The Office Action rejects Claims 15-16, 39-40, 67 and 82 under 35 U.S.C. § 103(a) as being obvious over the Cristovici '607 patent in view of the Langhoff '542 patent in view of the Carignani '827 patent and further in view of U.S. Patent Publication No. 2001/0033823 to Kuniyoshi. To the extent that the rejections would be applied to the claims, as amended, Applicants would respectfully traverse.

The Office Action rejects independent Claims 1 and 57 as being obvious over the Cristovici '607 patent in view of Langhoff '542 patent and rejects independent Claims 26 and 73 as being obvious over Cristovici '607 patent in view of the Langhoff '542 patent and further in view of the '827 patent to Carignani. The Cristovici '607 patent discloses a method of recovering metallic iron from slags and other residues. Recovery of metallic iron from slags formed when iron, steel and various ferrous alloys are handled in a molten state is quite different from the beneficiation of coal products, such as fuel and adsorbent carbon, from coal gasification slag. The Office Action does not address or otherwise comment on the differences between recovery of metallic iron and beneficiation of coal products.

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The Langhoff '542 patent discloses a method and apparatus for separating, collecting and classification of particles of coal gasification slag. Specifically, the Langhoff '542 patent teaches the use of cascaded containers 14, each of which comprises a box and a drum filter 16 mounted for rotation in the sidewalls 15 of container 14 (see Col. 6, ll. 41-43), to separate and collect the particles of slags. (See Col. 7, ll. 67-68 to Col. 8, ll. 1-33). The Langhoff '542 patent further teaches that the variables of water velocity and modifying the filter openings of the drum filter are used to adjust the size particles separated and collected.

The Carignani '827 patent discloses a method and device for transforming slurries coming from wet purification plants for fumes from blast furnaces and basic oxygen furnaces into a controlled size granular solid material. Specifically, the Carignani '827 patent is directed at treating generally slimes coming from industrial metal operations, particularly steel operations. As noted above with respect to the Critovici '607 patent, processing slurries comprising metallic materials is quite different from the beneficiation of coal products, such as fuel and adsorbent carbon, from coal gasification slag. Again, the Office Action does not address or otherwise comment on the differences between processing slurries comprising metallic materials and beneficiation of coal products.

Regarding the combination of the Critovici '607 patent and the Langhoff '542 patent and the Critovici '607 patent, Langhoff '542 patent, and Carignani '827 patent, Applicants submit that a person of ordinary skill in the art would have no reasonable motivation to combine the teachings of these references, as proposed in the Office Action. *See In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (Although the combination of the references in that case taught every element of the claimed invention, without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.) In this regard, there is no explicit suggestion in any of the cited references regarding the desirability for the combination proposed in the Office Action, nor does the Office Action identify any such explicit suggestion. Moreover, two of the references, *i.e.*, the Critovici '607 patent and Carignani '827 patent, are directed to methods and apparatus for processing of slurries with metallic constituents, while the other reference, *i.e.*, the Langhoff '542 patent, is directed to a method and apparatus for removal of particles from coal gasification slag using a method that is entirely

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different from that recited in independent Claims 1, 26, 57 and 73. Not only does it appear that the Critovici '607 patent and Carignani '827 patent are directed to non-analogous art, but given the disparate teachings and fields of the Critovici '607 patent and Carignani '827 patent on the one hand, and the Langhoff '542 patent on the other hand, Applicants submit that there is no implicit suggestion to combine the references either, as one of ordinary skill in the art would be expected to have knowledge relating to processing slurries comprising coal gasification and coal combustion by-products, but not processing slurries with metallic constituents. *See In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art."). Notably, the Office Action does not identify any explicit or implicit motivation for the combination of references proposed in the Office Action. Thus, respectfully, it appears that the only reason for combining of the cited references is Applicants' own patent specification, which is not a proper reason for combining of references.

Applicants further submit that the proposed combinations of the Critovici '607 patent and the Langhoff '542 patent and the Critovici '607 patent, Coleman '956 patent, and Carignani '827 patent do not meet every limitation of the patent claims, as amended, and, thus, do not render the claimed invention obvious. In this regard, Applicants have amended independent Claims 1, 57, and 73 to clarify the particle size of the portions being screened, *i.e.*, the first portion of material has a particle size exceeding approximately .5 inches and the second portion of material has a particle size of between approximately .5 inches and approximately 840  $\mu\text{m}$ , and amended independent Claim 26 to clarify the particle size of the portions being screened, *i.e.*, the first portion of material has a particle size exceeding approximately .5 inches, the second portion of material has a particle size of between approximately .5 inches and approximately 840  $\mu\text{m}$ , and the third portion of material has a particle size of between approximately 840  $\mu\text{m}$  and approximately 45  $\mu\text{m}$ .

None of the cited references, singly or combined, teaches or suggests screening coal gasification slag to separate and classify the slag into the particle size distributions recited in independent Claims 1, 26, 57 and 73, as amended, or having the specific carbon content as

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recited therein. In contrast, the Critovici '607 patent and Carignani '827 patent are both directed to methods and apparatus for processing of slurries with metallic constituents. In addition, although the Langhoff '542 patent is directed to separating and collecting slag particles from coal gasification slag, Langhoff teaches separating and collecting the particles using cascading containers having rotary drum filters not substantially planar first and second screens. Applicant submits that the particle size distribution and carbon content produced according to the present invention is advantageous since it enables large quantities of slag by-product to be beneficiated economically and efficiently into useful components with acceptable quality and sizing for specific end use markets.

Accordingly, it is respectfully submitted that independent Claims 1, 26, 57, and 73, as amended, and the claims depending therefrom, include recitations that patentably distinguish the claimed invention over the cited references and that the rejections directed to these claims be withdrawn.

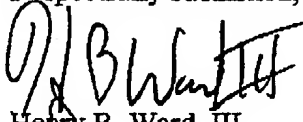
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In view of the foregoing remarks, Applicant respectfully submits that Claims 1-2, 5-16, 26-27, 30-33, 35-40, 57-58, 61-67, and 73-74, and 77-82 of the present application are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. Examiner Matthews is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

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It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

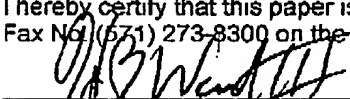
Respectfully submitted,

  
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I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office at Fax No. (571) 273-8300 on the date shown below.

  
Henry B. Ward, III

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Date